Remarks

In the interest of clarity, the paragraph numbers hereafter match the paragraph numbers in the Office Action.

4. Claim 51 has been amended to replace "con" with "condition."

5. The Office Action rejected all 110 claims of this application as anticipated by Takahashi (4,770,841).

As an initial matter, Applicant notes that US patent No. 4,770,841 issued to Haley, not Takahashi. The Takahashi reference on the PTO-892 form is US patent No. 6,618,692. On December 12, 2006 Applicant confirmed with the Examiner that the rejection was to have been based on US patent No. 6,618,692 and not US patent No. 4,770,841. This response is based on an analysis of the Takahashi reference (i.e., US patent No. 6,618,692).

Applicant traverses this rejection with respect to claims 33, 36 and 90. Applicant has amended each of claims 1, 28, 62, 64 and 87. The claim subsets are discussed separately below.

Claims 1-27. When a diagnostic process is performed and the results indicate that some service or maintenance activity is required for a first machine, the service or maintenance activity usually requires the attention of a maintenance or service employee. In many cases where diagnostic processes are routinely and automatically performed (e.g., once every week) and maintenance is required, a maintenance employee is not immediately available to perform the required maintenance and therefore either the first machine has to continue operating under suspect circumstances or has to be shut down until a maintenance employee can attend to the machine.

In the above example, it has been recognized that during the interim periods between routine and automatic diagnostic procedures (e.g., weekly procedures) often a

maintenance employee is located proximate machines such that if it were known that maintenance were needed during one of the interim periods, it would be extremely easy for the maintenance employee to perform the required maintenance so that the problem described above could be avoided. To this end, according to at least one aspect of the present invention, some of the claims in the present application cause summary diagnostic processes to be performed automatically whenever a maintenance employee charged with maintaining machines is proximate those machines so that if maintenance is required, the employee can attend to machines that require the maintenance in a quick and efficient manner.

Some claims in the present application require a summary process to be performed automatically whenever a "triggering relationship" between a user and an operation occurs. Here, the triggering relationship phrase includes a relative juxtaposition between the user and the operation but can include other circumstances under which it may make sense for a user to be made aware of maintenance issues related to a specific machine. For instance, where first and second machines operate together and a user is scheduled to maintain the first machine at a first scheduled time, it would be convenient for a diagnostic procedure to be performed on the second machine prior to the firs scheduled time so that if the second machine needs maintenance, the second machine can be services along with the first machine at the first scheduled time. Other triggering relationships are generally contemplated.

Consistent with the above comments, amended claim 1 now requires that when a triggering relationship between an enterprise user (e.g., a maintenance employee) and an operation (e.g., a machine) occurs, a processor automatically performs at least one summary process. Thus, claim 1 requires, among other things, (1) a decision that a triggering relationship has occurred and (2) an automatic summary process when the triggering relationship has occurred.

Turning to Takahashi, Applicant has examined Takahashi in great detail and is clear that Takahashi fails to teach or even remotely suggest determining automatic processing based on occurrence of a triggering relationship. In general Takahashi

teaches a remote diagnostics system wherein manufacturers contract with a maintenance company for the right to use diagnostics software that is maintained by the maintenance company. Thus, employees of the manufacturers (see companies B, C, N in Fig. 1) can link to diagnostic equipment (see 70 in Fig. 1) and run diagnostics software to diagnose their equipment.

After scouring Takahashi and examining the sections of Takahashi cited in the Office Action in great detail, Applicant was unable to find any suggestion that Takahashi contemplated a system that could determine any type of relationship between a user and an operation/machine. Specifically, Takahashi's Abstract mentions nothing about an automatic triggering relationship or anything akin thereto and in fact indicates clearly that diagnostics processes are initiated when a user accesses a diagnostics program which teaches away from automatically triggering diagnostics or summary programs when a specific relationship occurs. Figures 1-3 and 11 have nothing to do with determining when automatic triggering of processes.

The column 3 and 4 section cited in the Office Action teaches a periodic diagnosis program that requires a user to access the program in order to start the diagnostic process (see col. 3, lines 56-58 and col. 4,lines 11-13). Consistent with our understanding of the "periodic diagnosis process", at col. 12, line 66 through col. 13, line 2, Takahashi teaches that a user must request diagnostic equipment in order to start the diagnostic process. Thus, the term "periodic" does not mean automatically periodically performed and instead means that a process can be periodically requested by a user even when there is no sign that an abnormality has occurred. In this regard the "periodic diagnostic process" in Takahashi should be contrasted with Takahashi's "abnormality diagnostics mode" described at col. 17, lines 57 through col. 18, line 21 where diagnostics are performed at a user's request only after the user has perceived an abnormality. Again, a system that requires a user to request diagnosis teaches away from the claim 1 system where a summary process is automatically triggered upon the occurrence of a relationship.

The column 6 and 7 section cited in the Office Action is generally consistent with

other section of Takahashi where users have to access and request diagnostics procedures in a manual fashion (see col. 7, lines 16-18 and lines 27-29 that require a user to access diagnostic equipment). The column 10 and 11 sections cited in the Office Action teach that, while diagnostics procedures can be performed in an automated fashion by client users (e.g., employees of a manufacturer like company B or company C in Fig. 1 of Takahashi), in at least some cases, a client user can request advice from diagnostics professionals that work for the maintenance company (i.e., company A in Takahashi's Fig. 1 – see col. 10, lines 46-52). Again, the manual step of requesting advice is inconsistent with automatic triggering of processes. The column 17 and 18 sections cited in the Office Action teach that when a client user perceives that an abnormality has occurred with a machine, the client employee can request diagnosis by the diagnostic equipment that is maintained by the maintenance company (see col. 17, lines 57-63). As in the Abstract, the column 17 teachings that require a user to request diagnosis teach away from a system like the system of claim 1 where a summary process is automatically initiated upon the occurrence of a triggering relationship.

For at least the above reasons Applicant believes that claim 1 and claims that depend there from are patentable over Takahashi and requests that the rejection be withdrawn.

With respect to claim 11, claim 11 further limits claim 1 by requiring that the triggering relationship specify a first relative juxtaposition of the enterprise user and the operation (e.g., a machine). Implicit in claim 11 is a process for determining the location of a user (i.e., you cannot determine the relative juxtaposition of a mobile user in a facility to an operation without knowing the location of the user). Again, after scouring Takahashi, Applicant was unable to find even a single teaching or suggestion that of a system where user location was determined or where a relative juxtaposition of a user to an operation was used to commence a summary process. In absolutely all cases Takahashi teaches that a user must request a diagnostic process to commence the process.

To clearly contemplate the differences between claim 1 and the Takahashi teachings it is instructive to consider an example. In Takahashi, if a user is proximate a machine or a user input terminal or in any other location in a facility for that matter, diagnostics procedures will not commence until the user affirmatively requests that the procedure start. Requesting a procedure is the exact opposite of automatically triggering a procedure. For at least this additional reason Applicant believes that claim 11 and claims that depend there from are patentable over Takahashi and requests that the current rejection be withdrawn.

With respect to claim 12, claim 12 further limits claim 11 and requires that a summary process be automatically performed every Y hours and that, when a triggering relationship occurs in the interim period between automatically performed summary processes, the Y hour period be reset. As discussed above, Takahashi teaches away from a system where diagnostic processes are automatic by, in every case, teaching that diagnostic processes must be requested by a user. To the extent that the Examiner maintains that diagnostic processes are performed automatically on a periodic basis in Takahashi, Applicant requests that the Examiner specifically point out sections of the references that include this teaching. In any event, where processes are not performed periodically and automatically, the claim 12 limitation that a process be performed every Y hours is missing and, for this additional reason Applicant believes that claim 12 is novel over Takahashi and requests that the rejection be withdrawn.

Claim 13 further limits claim 11 by requiring that the summary process only be performed when the triggering relationship (i.e., relative juxtaposition) occurs at least X hours after the most recent summary process was performed. This claim is to ensure that summary processes are not performed several times in a short period which could bog down the diagnostics system. For instance, where a maintenance employee is present in a facility during an entire day and moves into the first relative juxtaposition with the operation every 30 minutes, claim 13 may allow the summary process to be performed the first time the relative juxtaposition occurs but may prohibit the process during the remainder of the day if the X limitation is set to 24 hours. Takahashi does

not teach or suggest any feature akin to this process limiting feature and thus, for this additional reason Applicant believes that claim 13 is novel over Takahashi and requests that the rejection be withdrawn.

With respect to claim 15, claim 15 further limits claim 11 and requires that the user use an information device and that a sensor sense the location of the information device. Again, nothing in Takahashi teaches or suggests determining user location in any way. For this additional reason Applicant believes that claim 15 and claims that depend there from are novel over Takahashi and requests that the rejection be withdrawn.

Claim 16 requires that the information device be wireless. Takahashi does not teach or suggest a wireless device in any way and therefore Applicant requests that, for the additional reason, the rejection of claim 16 be withdrawn.

Claim 24 requires that the triggering relationship also include that the user in the relative juxtaposition to the operation be available to examine the summary process. Thus, for instance, in at least some cases, if a user is scheduled to be performing some other process when the user assumes the first relative juxtaposition to the operation and therefore is not available, claim 24 may prohibit the summary process. Takahashi teaches nothing about determining when a user is available to service a machine or operation and therefore clearly does not teach the limitations of this claim. For this additional reason Applicant believes that claim 24 is novel over Takahashi and requests that the rejection be withdrawn.

Claims 28-32. Turning to amended claim 28, claim 28 is similar to claim 11 requiring that a summary process be performed automatically when a user is in a first relative juxtaposition (i.e., location with respect to) to an operation. Again, Takahashi fails to teach or suggest any process that is automatically initiated when a user is in a specific location with respect to an operation. For the reasons discussed above with respect to claims 1 and 11 Applicant requests that the rejection of claim 28 and claims that depend there from be withdrawn.

Claim 29 includes limitations similar to claim 24 and, for the reasons discussed above with respect to claim 24 Applicant believes that claim 29 is novel. For this additional reason Applicant requests that the rejection of claim 29 and claims that depend there from be withdrawn.

Claim 31 further limits claim 28 by requiring that, when a trigger relationship occurs, a processor identifies a summary process to be performed as a function of the identity of the user in the triggering relationship. Takahashi does not contemplate a system where diagnostic processes performed depend of user identity. For this additional reason Applicant requests that the rejection of claim 31 and claims that depend there from be withdrawn.

Claims 33-35. Consistent with another aspect of at least some embodiments of the present invention it has been recognized that, while independent abnormalities in a manufacturing facility may not because for concern, where several abnormalities occur within a short time period and within the same general area of a facility, the aggregate of the abnormalities may be of interest from a service perspective. To this end, claim 33 requires that a pattern of diagnostically interesting conditions (e.g., abnormalities) be stored, that diagnostic processes be performed, that, as diagnostic procedures result in abnormalities, the abnormalities be looked at as a whole and compared to the stored pattern and, when the occurring abnormalities as a whole match the pattern, indicating that the pattern has occurred.

Takahashi teaches that diagnostics may be performed when a user recognizes that an abnormality (see col. 17, lines 57-63) which is clearly different than performing diagnostic procedures and identifying abnormalities via the diagnostic procedures. In addition, nothing in Takahashi teaches or suggests any of (1) specifying an abnormality pattern, (2) running diagnostics processes to identify abnormalities, (3) aggregating abnormalities that occur, (4) comparing occurring abnormalities in the aggregate to the pattern and (5) indicating that the pattern occurred when the occurring abnormalities match the pattern. For all of these reasons Applicant believes that claim 33 and claims

that depend there from are novel over Takahashi and requests that the rejection be withdrawn.

Each of claims 33 and 34 also have limitations that are not taught or suggested by Takahashi. To this end, claim 34 requires specifying a space size in which abnormalities have to occur and claim 35 requires providing a diagnostics map, limitations that are not taught by Takahashi.

Claims 36-61. Consistent with another aspect of at least some of the embodiments of the present invention, it has been recognized that when a diagnostically interesting condition occurs in a facility, often while several employees may be able to address the interesting condition, because of education, experience, location, or other factors, one of the several employees may be the optimal employee and that is the employee that should be noticed of the interesting condition.

Consistent with the above comments claim 36 requires, among other things, monitoring for diagnostically interesting conditions and when an interesting condition occurs, identifying a user that is optimal to address the condition and indicating the most optimal user.

Turning to Takahashi, Takahashi teaches nothing about distinguishing between system users when an interesting conditions that occur and instead, as discussed above, only starts diagnostic procedures after a user initially requests that the diagnostic process occurs. Where one user requests a process the results of the process are provided to the requesting user and there is no decision regarding which of several users is optimal for dealing with the diagnostic results.

For all of these reasons Applicant believes that claim 36 and claims that depend there from are novel over Takahashi and requests that the rejection be withdrawn. Many of claims 37-61 includes additional limitations that distinguish over Takahashi for reasons similar to those discussed above with respect to claims 27 which are not repeated here in the interest of simplifying this response.

Claims 62-63. Amended claim 62 requires at least one service resource to be located within an enterprise and after locating the service resources, automatically identifying optimal service resources for monitoring assembly operations based at least in part on the relative juxtapositions of the service resources and the assemblies and then indicating diagnostically interesting assembly conditions to the optimal resources when interesting conditions occur.

Takahashi fails to teach or suggest determining locations of any resources within a facility much less operations, machines or service resources. Because Takahashi fails to teach determining resource locations, Takahashi cannot possibly teach automatically identifying optimal service resources based on relative juxtapositions. For at least this reason Applicant believes that claim 62 and claims that depend there from are novel over Takahashi and requests that the rejection be withdrawn.

Claims 64-86. Amended claim 64 is an apparatus claim that includes limitations similar to the limitations of method claim 1 and therefore the distinguishing comments above with respect to claim 1 are applicable here. Thus, for the same reasons Applicant believes claim 1 is novel over Takahashi, Applicant believes amended claim 64 is novel and Applicant requests that the current rejection of claim 64 and claims that depend there from be withdrawn now.

Several of claims 65-86 include limitations similar to the limitations in claims 2-27 described above and, where limitations are similar, the comments above are applicable to the claims 65-86 and those claims are novel over Takahashi for the additional reasons described above.

Claims 87-89. Claim 87 is an apparatus claim that includes limitations similar to the limitations of method claim 28 and therefore the distinguishing comments above with respect to claim 28 are applicable here. Thus, for the same reasons Applicant believes claim 28 is novel over Takahashi, Applicant believes amended claim 87 is

novel and Applicant requests that the current rejection of claim 87 and claims that depend there from be withdrawn now.

Claims 90-110. Claim 90 is an apparatus claim that includes limitations similar to the limitations of method claim 36 and therefore the distinguishing comments above with respect to claim 36 are applicable here. Thus, for the same reasons Applicant believes claim 36 is novel over Takahashi, Applicant believes amended claim 90 is novel and Applicant requests that the current rejection of claim 90 and claims that depend there from be withdrawn now.

Applicant has introduced no new matter in making the above amendments and remarks. In view of the above remarks, Applicant believes claims 1-110 of the present application recite patentable subject matter and allowance of the same is requested. No fee in addition to the fees already authorized in this and accompanying documentation is believed to be required to enter this amendment, however, if an additional fee is required, please charge Deposit Account No. 17-0055 in the amount of the fee.

Respectfully submitted,

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